

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A casting nozzle having a molten steel flow hole portion in which a plurality of independent protrusion portions and/or concave portions discontinuous in both directions parallel and perpendicular to a molten steel flowing direction are disposed, wherein each of said protrusion portions and/or concave portions has a size satisfying the following expressions (1) and (2):

$$H \geq 2 \text{ (unit: mm)} \quad \cdots \text{ expression (1)}$$

$$L > 2 \times H \text{ (unit: mm)} \quad \cdots \text{ expression (2)}$$

in which "H" shows the maximum height of the protrusion portion or the maximum depth of the concave portion, and "L" shows the maximum length of a base portion of the protrusion portion or concave portion.

2. (original): The casting nozzle according to claim 1, wherein each of said protrusion portions and/or concave portions satisfies the following expression (3):

$$L \leq \pi D/3 \text{ (unit: mm)} \quad \cdots \text{ expression (3)}$$

in which "L" shows the maximum length of a base portion of the protrusion portion or concave portion, and "D" shows the inner diameter (diameter) of the nozzle before the protrusion portions or concave portions are disposed (π : the ratio of the circumference of a circle to its diameter).

3. (currently amended): The casting nozzle according to claim 1 ~~or~~ 2, wherein said protrusion portions and/or concave portions are disposed so that the inner surface area of a molten steel flow path in a range in which said protrusion portions and/or concave portions are disposed is 102-350 % as large as the inner surface area of the molten steel path before disposition of said protrusion portions and/or concave portions.

4. (currently amended): The casting nozzle according to ~~any one of~~ claims 1 ~~to~~ 3, wherein said casting nozzle has a portion where said protrusion portions and/or concave portions are disposed so zigzag that positions are displaced at least in the direction perpendicular to the molten steel flowing direction.

5. (currently amended): The casting nozzle according to ~~any one of~~ claims 1 ~~to~~ 4, wherein said protrusion portions and/or concave portions are disposed in the whole or part of the molten steel flow hole portion of the casting nozzle.

6. (currently amended): The casting nozzle according to ~~any one of~~ claims 1 ~~to~~ 5, wherein said protrusion portions and/or concave portions are disposed so as to be not higher than a meniscus of the casting nozzle.

7. (currently amended): The casting nozzle according to ~~any one of claims 1 to 6~~, wherein the distance between bases of said protrusion portions in a direction parallel to the molten steel flowing direction is not smaller than 20 mm.

8. (currently amended): The casting nozzle according to ~~any one of claims 1 to 7~~, wherein the height of each of said protrusion portions is 2-20 mm.

9. (currently amended): The casting nozzle according to ~~any one of claims 1 to 8~~, wherein the number of said protrusion portions disposed in the molten steel flowing hole portion is not smaller than 4.

10. (currently amended): The casting nozzle according to ~~any one of claims 1 to 9~~, wherein the “angle between a nozzle inner pipe and a lower end portion of each of said protrusion portions” in a direction parallel to the molten steel flowing direction is not larger than 60°.

11. (currently amended): The casting nozzle according to ~~any one of claims 1 to 10~~, wherein said protrusion portions are molded so as to be integrated with a body of the casting nozzle.

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12. (currently amended): The casting nozzle according to ~~any one of~~ claims 1 to 11,
wherein said casting nozzle is an immersion nozzle for continuously casting steel.